



NOTEBOOKS FAQ

Q My small notebook is great for computing on the move, but when I get home it would be nice to have an external monitor and input devices. Is it as simple as just plugging them in?

A Adding these accessories is easy if you have the correct ports. Most notebooks come with a VGA output, but check your manual to make sure yours does. Any LCD monitor will plug into this. If you opt for an external monitor, you must activate the VGA port. Usually holding down the Fn key and pressing a function key cycles through the display options, but check your notebook's manual if you're unsure.

You may find that a desktop monitor has a lower resolution than your notebook's display. In this case, you can buy a notebook stand, which holds your notebook at an angle so you can use its display comfortably.

Before you buy a keyboard and mouse, check which ports your notebook has. Older notebooks may have PS/2 ports for just this purpose, while newer models have USB2 ports. If you are short of USB2 ports, consider buying a USB2 hub to increase the number available.

Q I've heard that someone is making a \$100 notebook. Can we expect to see it soon, and how powerful will it be?

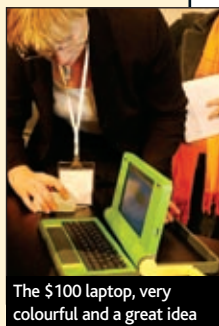
A The idea behind the \$100 (around £56) notebook is to provide cheap computers to children in developing countries for educational purposes. It's spearheaded by One Laptop Per Child (OLPC), a not-for-profit organisation based in America. There are no plans to sell it to the public, but this may change.

The \$100 system will use a Linux-based operating system and have a dual-mode display: standard full-colour, and black-and-white for reading in sunlight. Inside it will have a 500MHz processor and 128MB of RAM but no hard disk – it will use 500MB of Flash memory for storage.

Each laptop will have a wireless connection that allows it to talk to its nearest neighbours, creating an ad hoc LAN. They will use a variety of power sources, including a wind-up mechanism, and will be able to do most computing tasks except store huge amounts of data.

The finished design was unveiled late last year at the UN, and the designers have now found a production partner. For details, visit <http://laptop.media.mit.edu>.

seth@computershopper.co.uk



The \$100 laptop, very colourful and a great idea

REVIEW NOTEBOOK PC

ACER Aspire 5670WLMi

RATING ★★★★★

PRICE £1,199 inc VAT

SUPPLIER www.acernotebooks.co.uk

0870 167 0819

DETAILS www.acer.co.uk



Dual-core processors have been appearing in desktop PCs for nine months, but this is the first notebook we've seen with one. Acer's Aspire 5670WLMi uses Intel's Core Duo technology, which we'll see in many notebooks and desktops in future.

The Intel Core Duo T2300 processor has a clock speed of 1.66GHz, around the same as that of the Pentium M 730. The T2300 has two cores running at this speed, which improves performance when running multiple or multi-threaded applications. The frontside bus has risen from 533MHz to 667MHz, increasing the speed of memory access.

Our multi-threaded video-encoding test demonstrated the benefit of a dual-core chip. The Acer 5670WLMi managed a stunning benchmark score of 158. We ran an extra test, encoding a DVD scene while running our full benchmark suite. It completed 42 per cent of the clip, compared with the 15 per cent of an average single-core processor. If you run intensive applications simultaneously, or multi-threaded ones, you'll notice the difference. It also scored a fast 105 in the single-threaded image manipulation test, thanks to increased FSB speed.

The notebook has a healthy 1GB of RAM and a massive 120GB hard disk. The new X1400 graphics chipset is equivalent to the old X700 in

performance. It plays most games with the detail levels reduced, and will suit the occasional gamer.

There are all the ports and slots you'd expect from an expensive notebook. The optical drive is a stylish slot-loading model and there's a memory card reader with support for popular formats. There are four USB2 ports, plus S-video and DVI outputs.

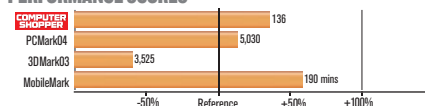
The display is gloss coated, making colours more vivid and blacks darker. It has a resolution of 1,280x800, which may be insufficient for complex applications such as 3D modelling. Image quality is excellent, though. There's a built-in webcam above the screen for internet chat and video conferencing.

At just under 3kg, it's very portable for a PC with this much power. Battery life is good, lasting more than three hours in our low usage test. Using full processing power will reduce this figure, though.

So how useful is dual-core processing in a notebook? Serious power users want larger displays with higher resolutions. Casual home users don't need dual-core processors to run a browser and an email program. Still, if you need more processing power from your notebook, this is a great choice.

Seth Barton

PERFORMANCE SCORES



✓ Latest dual-core processor; slim and well-designed chassis

✗ Graphics performance not as good as 2D performance

SPECIFICATIONS 1.66GHz Intel Core Duo T2300, 1GB RAM, 120GB hard disk, 256MB ATI Mobility Radeon X1400 graphics, DVD+/-RW DL drive, 15.4" LCD screen, weighs 2.95kg. **Part code** LX.A8505.026

HOTLIST NOTEBOOK PC

ACER Aspire 5002WLMi

RATING ★★★★★

PRICE £565 inc VAT

SUPPLIER www.acernotebooks.co.uk

0870 167 0819

DETAILS www.acer.co.uk



Acer's Aspire 5002WLMi won our budget notebook group test in *Shopper* March 2006. The chassis is well built, with a good keyboard and touch pad and all the ports you'll need. The widescreen display is very bright and has a gloss coating that improves contrast, making it perfect for watching DVDs. There's a 60GB hard disk for storage and a two-layer DVD writer for backups.

The 5002WLMi performed respectably in our tests and will easily handle day-to-day tasks. The battery lasted a decent two-and-a-half hours, which is fine for occasional mobile use. This a

fantastic notebook for the price and it is ideal for use around the home.

SPECIFICATIONS 1.6GHz AMD Turion ML30, 512MB RAM, 60GB hard disk, SiS M760GX integrated graphics, DVD+/-RW DL, 15.4" widescreen LCD, weighs 2.95kg. **Part code** LX.A5105.200



REVIEW NOTEBOOK PC

EVESHAM
QUEST A420

RATING ★★★★★

PRICE £999 inc VAT

SUPPLIER Evesham 08716 661616

DETAILS www.evesham.com

Windows XP Media Center Edition 2005 is appearing on more and more computers. Originally reserved for hi-fi-style living room PCs with TV tuners, it's now found on notebooks such as Evesham's Quest A420. We applaud this move wholeheartedly, as the excellent interface makes accessing your media files easier.

The Quest A420 plays games well. Evesham has used the brand new Radeon Mobility X1600 graphics chipset with 256MB of dedicated memory. It scored 37.8fps in our Doom 3 test, which is good enough to run any modern game at decent detail levels without a problem.

The 15.4" display is widescreen with a native resolution of 1,280x800. It is ideal for playing new games that support widescreen resolutions, such as Call of Duty 2. The screen has a gloss coating. There is a slight graininess to the display and the whites could be a bit brighter, but it does the job well and will make your games look good.

A handy webcam is built into the edge of the lid.

The chassis is slender and tastefully finished in dark grey with an illuminated Evesham logo on the lid. It feels reasonably sturdy and should withstand a few knocks. The keyboard is a nice size, but the keys lack spring and typing becomes tiring after a while. While the Quest A420 is fine for gaming and

web browsing, we wouldn't recommend it for budding novelists.

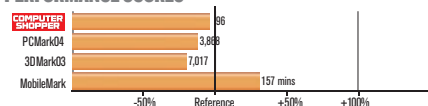
The speakers on either side of the keyboard lack bass, but sound clear up to their maximum volume. The touch pad is big and correctly proportioned for the widescreen display. All the usual ports are provided, including four USB2 ports, a DVI output, FireWire and a memory card reader.

Inside there's a large 100GB hard disk and a DVD writer to deal with all your storage needs. A generous 1GB of RAM is paired with a fast 2.0GHz AMD Turion processor. This gave a respectable overall score of 96 in our benchmarks. It will manage all but the toughest tasks. Battery life was 157 minutes, average given the large battery pack that extends from the rear of the notebook.

The Quest A420 is ideal for use around the home. The combination of Media Center and a powerful graphics card means it has something to entertain everyone. It's not cheap, but it will undertake almost any task you throw at it. But if you plan to type a lot, get an external keyboard.

Seth Barton

PERFORMANCE SCORES



✓ Lots of 3D power; Windows XP Media Center Edition

✗ Poor keyboard

SPECIFICATIONS 2.0GHz AMD Turion MT-37, 1GB RAM, 100GB hard disk, 256MB ATI Radeon Mobility X1600 graphics, DVD+/-RW DL drive, 15.4" LCD screen, weighs 2.9kg

HOTLIST NOTEBOOK PC

HP
Compaq nx6110

RATING ★★★★★

PRICE £450 inc VAT

SUPPLIER www.laptopsdirect.co.ukDETAILS www.hp.co.uk

HP's Compaq nx6110 won a Best Budget Buy award in our Labs test of budget notebooks in *Shopper* December 2005. This superb notebook has excellent build quality with a tough chassis and no-nonsense business looks. The keyboard and touch pad are a joy to use, and should last for a long time. The display is vibrant and the speakers are clear and loud.

It isn't a powerhouse but it will easily manage day-to-day tasks such as office applications or web browsing. If you need more performance, you can add 256MB of extra RAM for around £25. The battery lasted almost four

hours in our tests. It's a well-built notebook that was a good buy for £504, and is now a real bargain at just £450 including VAT.

SPECIFICATIONS 1.4GHz Intel Celeron M 360, 256MB RAM, 40GB hard disk, Intel 915GM integrated graphics, CD-RW/DVD combo drive, 15" LCD. Part code PY496ET

BYTE
SIZE!

Our round-up of the best new gadgets and software

iSKIN
Duo for iPod Nano

RATING ★★★★★

PRICE £20 inc VAT

SUPPLIER www.macwarehouse.co.ukDETAILS www.iskin.com

iPods may be stylish but, as Apple doesn't sell them with cases, they can soon look rough around the edges. If you want to protect your iPod Nano but don't want to spoil its good looks, iSkin's Range of Duo skins are ideal.

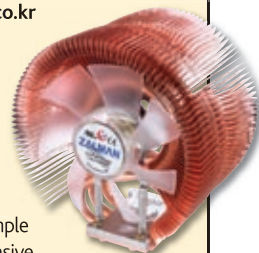
The Duo encases your iPod in two coloured rubber membranes, protecting it from scratches and knocks, while a plastic insert keeps the screen safe. They come in a range of colours, so there's bound to be one that suits you. The case feels tough, and squeezing a Nano into this protective sheath is easy enough. An ugly belt clip sits at the back, which is difficult to remove. That aside, £20 is pretty good for keeping your Nano protected.

David Ludlow

ZALMAN
CNPS9500 LED

RATING ★★★★★

PRICE £46 inc VAT

SUPPLIER www.quietpc.comDETAILS www.zalman.co.kr

Zalman makes a large range of quiet heatsinks. The CNPS9500 LED is a huge copper heatsink for all current desktop Intel and AMD processors. Fitting the heatsink is simple thanks to the comprehensive instructions. The CNPS9500 is huge, though, and we had to remove the side exit fan from our test case to make it fit. The heatsink comes with a rheostat that controls the fan's speed, which you plug in between the heatsink's fan and the CPU header on the motherboard.

The fan is quieter than AMD's standard cooler at both minimum and maximum speed settings, and its cooling performance was similar at the slowest speed setting. This is a well-designed and quiet heatsink, but it is expensive.

Chris Finnamore

REVIEW **NOTEBOOK PC****ROCK**
Xtreme 64 4200+

RATING ★★★★★

PRICE £1,996 inc VAT

SUPPLIER Rock Direct 08709 909090

DETAILS www.rockdirect.com

Acer's Aspire 5670 notebook on page 18 shows off Intel's new mobile dual-core processor. Rival AMD has yet to release its dual-core mobile processor. That hasn't deterred Rock, which has taken a powerful desktop processor and shoehorned it into this desktop replacement chassis.

Both processor cores in the Athlon 64 X2 4200+ run at 2.2GHz, which gives it amazing performance for a portable computer. In our video-encoding test it managed a sensational 180. It performed well in single-threaded applications, scoring 113 in our image manipulation test. We ran our dual-core DVD encoding test as well, and it managed 53.9 per cent of the video clip while simultaneously running our usual benchmarks, with hardly any drop in performance.

The downside is the sheer bulk of its chassis. It's about twice the size of the Aspire 5670WLMi and weighs around 5.5kg, and the battery will barely see you out the front door at 67 minutes. This size allows room for a large 17" widescreen display, though. It has a massive resolution of 1,680x1,050, so there's plenty of room on your desktop to run multiple applications. The display isn't as bright as some we've seen recently, but it passed our greyscale and colour wheel image quality tests with ease.

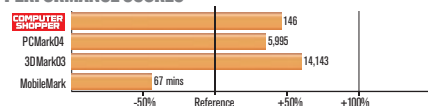
The best use for that display is to show the full power of the nVidia Go 7800 GTX graphics chipset. This gives it enough 3D power to play any modern game at sumptuous detail levels. In our Doom 3 test, it managed 82.5fps. We installed Call of Duty 2 and were impressed by the smoothness of play and widescreen visuals. This is a great games machine with a healthy lifespan ahead.

A pair of 100GB hard disks in a RAID-0 array provide a huge 200GB of storage, although if you prefer you can choose to have a RAID-1 mirroring array when you order. This gives only 100GB of storage, but each hard disk holds a copy of your data. If either one fails, all your files are safe.

There is also a decent keyboard, a large touch pad and reasonable speakers, but many users will use external replacements for some or all of these.

The Xtreme 64 4200+ provides a lot of power. But you'll need to do some serious computing to justify the price. Gamers can get similar 3D performance for almost £600 less from Rock's Xtreme CT 2.0GHz in our Hotlist below.

Seth Barton

PERFORMANCE SCORES

✓ Incredible performance in both games and applications

✗ Large; very heavy; very expensive

SPECIFICATIONS AMD Athlon 64 X2 4200+, 1GB RAM, 2x 100GB hard disks, 256MB nVidia GeForce Go 7800 GTX graphics, DVD+/-RW DL drive, 17" LCD screen, weighs 5.5kg. **Part code** X64-4200

HOTLIST **NOTEBOOK PC****ROCK**
Xtreme CT 2.0GHz

RATING ★★★★★

PRICE £1,411 inc VAT

SUPPLIER Rock Direct 08709 909090

DETAILS www.rockdirect.com

Rock's Xtreme CT 2.0GHz lets you play the latest games without the need for a bulky desktop PC. The nVidia GeForce Go 7800 GTX chipset provides blistering frame rates in all the latest and most demanding titles. It stormed through our standard Doom 3 test with a score of 85.2fps. The excellent 17" widescreen display works best with compatible titles such as Call of Duty 2.

There's a fast 2GHz Pentium M processor and 1GB of RAM, which helped it to a respectable 92 overall in our benchmarks. The 60GB hard disk is a bit on the small side, though, so you'll have to delete unused games regularly.

Battery life is a paltry 95 minutes, but that's to be expected with this much graphical muscle. The Rock is a well designed and powerful notebook that is ideal for gamers.

SPECIFICATIONS 2GHz Intel Pentium M 760, 1GB RAM, 60GB hard disk, nVidia GeForce Go 7800 GTX graphics, DVD+/-RW DL, 17" widescreen LCD. **Part code** XCT-2.0

BYTE SIZE!

Our round-up of the best new gadgets and software

MICROSOFT
Comfort Optical
Mouse 3000

RATING ★★★★★

PRICE £15 inc VAT

SUPPLIER www.savastore.comDETAILS www.microsoft.co.uk

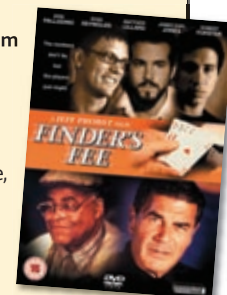
While most optical mice have a resolution of 800dpi, Microsoft's Comfort Optical Mouse 3000 is a budget mouse with a 1,000dpi sensor. Unlike Microsoft's IntelliMouse range, this mouse doesn't have buttons on the left and right for browsing backwards and forwards through web pages. Instead a small button on the left magnifies the area around the cursor. By holding the magnification button and moving the mouse, you expand the magnified area, while the scroll wheel zooms in and out. This is useful for close-up image editing. The extra resolution makes for smooth pointer movement. An accurate, comfortable mouse at an excellent price.

Chris Finnamore

DVD **Finder's Fee**

RATING ★★

PRICE £10 inc VAT

DETAILS www.blahdvd.com

If you found a wallet, called the owner to let him know and then discovered a winning lottery ticket inside, what would you do? This is the moral quandary faced by Tepper (Erik Palladino) – especially as he's not supposed to know the numbers because he and his friends intend to bet their tickets in the night's poker game. And when Avery (James Earl Jones) turns up to collect his property, only to be trapped in the apartment because of a police lockdown, things start to get weird. The wildly confusing trailer included on the disc just goes to show how convoluted and implausible this thriller is. Despite a couple of decent performances, *Finder's Fee* is dragged down by its gaping plot holes, its inconsistent characterisation and the dependably irritating Matthew Lillard.

Chris Miller



BYTE SIZE!



Our round-up of the best new gadgets and software



GENIUS ErgoMedia 700

RATING ★★★★★

PRICE £20 inc VAT

SUPPLIER www.microdirect.co.uk

DETAILS www.genius.co.uk

A comfortable typing position is key if you want to avoid wrist strain. The ErgoMedia 700 looks like a smiling face, and its keys are angled to aid a better typing position. It's comfy, but it may take time to get used to the layout. The keys have a fair amount of travel but are all set at the same height, so it's not as comfy as a sloped keyboard.

The keyboard gets the media part of its name from the buttons that adjust volume and control playback of audio and video tracks. There are also headphone and microphone ports in the side. The best thing about this keyboard is the price.

David Ludlow

PEAK II 4GB Flash Drive

RATING ★★★★★

PRICE £162 inc VAT

SUPPLIER www.techfever.co.uk

DETAILS www.peakhardware.com

Peak's 4GB Flash Drive is the largest capacity drive we've seen. It costs £50 more than Sony's hard disk-based 5GB MicroVault, reviewed on page 44. But what it loses in value, it makes up for in size. It's small, the size of a packet of chewing gum, and will fit easily into any pocket.

Performance is a key issue with flash drives, as many of the cheaper models can be slow. With write times of 10.3MB/s and read times of 16MB/s, Peak's 4GB Flash Drive won't set the performance world on fire, but it's far from slow. If you're after a lot of storage space and size isn't an issue, hard disk-based devices are better value. If physical size is your prime concern, though, this is good value and not a bad performer.

David Ludlow



CHOOSING A...

NOTEBOOK COMPUTER

Follow our simple step-by-step advice to find the perfect notebook PC for your needs and your budget

1 The minimum specification of notebook we recommend, shown below in grey, is a good starting point when working out your ideal system. This is an average notebook that should cost around £700. It is not particularly powerful or, at 3kg, particularly portable. Mobile processors increase battery life and are now fairly common, even at this price.

2 Most people want a better notebook than the minimum – but what is your definition of better? Do you want something more powerful, or lighter and better-looking? Desktop replacement notebooks, which approach the power of a full-size PC, are necessarily large to house the extras. These usually include a desktop processor and larger battery to keep the whole lot running for any length of time.

3 If portability is your main priority, keep the spec modest (a Pentium M 1.7GHz with a 15" screen, say) but spend more. This will buy you an executive notebook with the kind of cutting-edge design required to miniaturise without compromising usability. Clever chassis, expensive batteries and the finest materials are prerequisites for superior ultra-portable notebooks.

4 There are features you can add to a notebook without piling on weight or reducing battery life. A 60GB, 80GB or 100GB hard disk and 1GB of RAM won't hurt. Another possibility is an external drive that you can carry with you or leave at home according to the nature of your trip. Some ultra-portables can attach to an optional docking station, which incorporates drives, ports and extra power for when you need it. It's the best of both worlds, but tends to be expensive.

5 If you're not swayed by ultra-portable chic, you can get a lot more for your money. Today's desktop replacements pile on the features but still keep the price well under £1,500. Alternatively, go for a balanced package: middling power and price in a reasonably portable package. Which one you pick depends on how much power and which features you need, so consider each in turn.

6 Notebooks run the same software as desktops, so our advice on the core specification is the same (see page 16). However, hard disks go up to only

120GB and even the best notebook graphics lag slightly behind desktops.

7 DVD rewriter drives are standard and will allow you to burn CDs and DVDs on the move. If you want to watch movies, consider buying a notebook with a widescreen display.

8 A 1,024x768 screen is the entry level these days, but its size will depend on the notebook's purpose. Ultra-portables might have screens as small as 9". Widescreen displays have resolutions of 1,200x768 upwards but make for a bulkier notebook.

9 A modem and regular 10/100 Ethernet port are standard. Centrino notebooks also have wireless 802.11b or 802.11g networking (WiFi), and it's becoming increasingly popular on all models. IEEE-1394 (FireWire) and Bluetooth can be added to the default TV-out and USB2.0 ports. Memory card readers are extremely common, so check that your camera or MP3 player's format is supported.

10 Once you're happy with your specification, start to shortlist some models you can afford. Check the weight and battery life of each of them. If these aren't acceptable, you need to reconsider how much power and which features you really need.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

PROCESSOR: 1.4GHz Intel Celeron M360

MEMORY: 512MB DDR

HARD DISK: 40GB

STORAGE: DVD rewriter

GRAPHICS: Integrated
(using system memory)

SCREEN: 1,024x768 LCD

EXTRAS: Wireless networking, FireWire

CONNECTORS: Three USB2, network, modem

SOFTWARE: Windows XP Home Edition

WEIGHT: 3kg